IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit	: 1794	**Customer No. 035811**
Examiner	: Michael B. Nelson	
Serial No.	: 10/584,741	Docket No.: TIP-06-1177
Filed	: June 26, 2006	
Inventors	: Shigeru Tanaka	Confirmation No.: 5793
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Title	: Reiko Morita	
	: BIAXIALLY ORIENTED WHITE	
	: POLYPROPYLENE FILM FOR	
	: THERMAL TRANSFER RECORDING	
	: RECEIVING SHEET FOR THERMAL	
	: TRANSFER RECORDING THEREFROM	
		Dated: September 28, 2009

RESPONSE

Commissioner for Patents
P.O. Box 1450
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Sir:

This is submitted in response to the Advisory Action dated August 12, 2009 and is submitted together with an RCE so that the Examiner will have ample opportunity to consider the following compelling comments in favor of patentability.

The Applicants first note that there appears to be some confusion regarding "β-crystal nucleating agent" and "nucleus of voids originated by PMP (polymethylpentene)." To clarify this language, the Applicants provide the following explanation:

An unstretched sheet including β-crystal nucleating agent has voids when it is stretched, but β-crystal nucleating agent does not exist as a nucleus of voids. On the other hand, an unstretched sheet including such as a PMP has voids when it is stretched, and the PMP becomes nuclei of voids.

The claimed film has substantially non-nucleus voids, or has substantially non-nucleus voids as a core layer (layer A) in another configuration as in a laminated film structure with a skin layer (layer B). The non-nucleus voids are originated with no PMP added, and there are nucleus voids in the layer A if PMP is added.

The Applicants' Specification discloses advantages of the film from paragraphs [0057] to [0062] and there are very uniform and fine voids as shown in Fig. 2, which has a diameter of less than 0.1 μm in the film thickness direction (from top to bottom direction). The uniform and fine voids make a film possible that has a high cushion factor.

The films of Asakura have β-crystallization nucleating agent and poly-4-methyl pentene-1 (PMP) in the core layer (A layer). Asakura discloses a higher cushion as the contents of PMP increase as shown in Examples 2, 3 and 4. Therefore, one skilled in the art would not attempt to obtain a higher cushion factor with no PMP.

Sadamitsu does not disclose uniform and fine voids or obtaining a high cushion factor. Instead, Sadamitsu discloses "a maximum pore size of 0.1 to 5 μm in the film thickness direction" such as in Claim 5, and the film of Sadamitsu does not have uniform and fine voids, but coarse voids, which cannot obtain a high cushion factor. The cushion factor of Sadamitsu must be out of the claimed range. Thus, it is not even possible to combine Asakura and Sadamitsu and produce the claimed subject matter.

With regard to the comments in the rejection in paragraph [0003], a high cushion factor corresponds to the voids with a high uniformity. The uniform and fine voids make a film possible to have a high cushion factor.

With regard to the comments in the rejection in paragraph [0004], the pore size of Sadamitsu is disclosed as being below 0.1 micrometer in paragraph [0031] which is a sufficiently

small pore size for the claimed cushioning factor. "The pore size being below 0.1 micrometer ([0031]) of Sadamitsu et al." is the size that penetrates one surface to the other surface of a film. Sadamitsu's pore size that affects the cushion factor is around 10 μm as shown in the Examples of Sadamitsu.

The Applicants respectfully submit that it is critical in combining references under §103 that one skilled in the art would have a reasonable expectation of success in making the combination and modifications as suggested in the rejection. The Applicants respectfully submit that one skilled in the art would not have a reasonable expectation of success in producing a biaxially oriented white polypropylene film as recited in the solicited claims having a cushion factor of about 16 to about 30%. In that regard, the Applicants have previously established that Sadamitsu does not even mention cushion factor. It is therefore inherently impossible for one skilled in the art to have a reasonable expectation of establishing any given level of cushion factor, much less the claimed range of about 16 to about 30%.

Thus, we must turn to Asakura for any teachings regarding cushion factor. The Applicants have already established that increasing the amount of PMP increases the cushion factor while decreasing the amount of PMP decreases the cushion factor. The Applicants invite the Examiner's attention to Table 1 of Asakura which demonstrates this phenomenon as reflected in Embodiments 2-5. More particularly, Embodiments 2-4 show an increasing PMP resin content in layer A in the third column at 15, 20 and 30 wt %, respectively. In other words, the amount of PMP is increasing. Then, moving to the right hand portion of Table 1, it can be seen in the column that is second from the right that the cushion rate of the film is 12.6, 14.0 and 15.6% which corresponds to the aforementioned 15, 20 and 30 wt % of PMP. In other words,

increasing the amount of PMP increases the cushion rate. Also, it can be seen that the maximum cushion rate in those embodiments, as well as the entire column never is higher than 15.6.

The Applicants did something completely different and discovered a very unexpected result. The Applicants employ very, very small amounts of nucleating agent and nonetheless produce films that have cushion factors far exceeding those of Asakura. The Applicants invite the Examiner's attention to Table 2 of their Specification, for example, wherein high cushion factors are produced in the presence of very, very small amounts of nucleating agent.

Accordingly, this factually demonstrates that the Applicants generate high cushion rates with extremely low quantities of nucleating agent. On the other hand, Sadamitsu does not address cushion factors at all and is therefore essentially irrelevant with respect to this claimed feature. Asakura, on the other hand, teaches that it is necessary as demonstrated in its factual examples to increase the amount of PMP to increase the cushion factor. Thus, one skilled in the art would glean from these teachings that decreasing the amount of nucleating agent as the Applicants have done would likely result in a decrease in the cushion factor. In other words, those skilled in the art, upon consulting the Asakura disclosure, would have a reasonable expectation that decreasing the amount of nucleating agent would decrease the cushion factor. The Applicants surprisingly discovered just the opposite. They use very little nucleating agent yet generate high cushion factors that are higher than even the highest of the cushion factors of Asakura even when large amounts of nucleating agent were in use. The Applicants therefore respectfully submit that they have factually established unexpected results and that §103 is inapplicable over the combination of Sadamitsu with Asakura. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

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